ATTO Technology, Inc.

Tech Sheet

10GbE FCoE Converged Network Adapters

FastFrame™ CS14
FastFrame™ CS12
FastFrame™ CS11

ATTO's FastFrame™ Converged Network Adapters provide unified storage connectivity using Fibre Channel over Ethernet (FCoE) for demanding bandwidth intensive applications.

Industry Proven Technology

FastFrame Converged Network Adapters (CNAs) are built on ATTO's time-tested and industry-proven Fibre Channel technology. Leveraging over 15 years of Fibre Channel leadership with ATTO's Celerity Fibre Channel HBAs, combined with industry standard Ethernet technology from Intel, FastFrame CNAs deliver the highest-performing and most reliable connectivity solution for networking and storage infrastructures in today's data center.

Flexible Connectivity Solutions

FastFrame CNAs provide the most flexible multi-protocol connectivity for corporate data centers. By supporting 10 Gigabit Enhanced Ethernet, Fibre Channel over Ethernet and iSCSI protocols, FastFrame adapters offer a comprehensive connectivity solution for both the LAN and SAN infrastructure. ATTO offers the widest selection of CNAs with quad, dual and single port offerings. The ATTO FastFrame CS14 CNA is currently the only 4 port 10Gb/s Ethernet CNA available in the market.

Performance Engineered

FastFrame CNAs provide industry-leading throughput and latency management with minimal CPU utilization and power consumption. With 10Gb/s data transfer rates and multiple offloads (FCoE and TCP/IP), FastFrame adapters can handle high-bandwidth, large packet payloads common to data center applications such as server and storage clustering, video and data streaming, data centers and file servers, content delivery and high performance computing. Like all ATTO host and RAID adapters, FastFrame CNAs are engineered to maintain consistent high-performance connectivity for small and large data transfers alike.

Maximize Return on Investment

FastFrame CNAs protect existing network investments by seamlessly integrating with existing Fibre Channel sotrage and preserving high performance features over lossless Ethernet. By converging LAN and SAN traffic, FastFrame CNAs reduce hardware costs by allowing data centers to use fewer adapters and switches, reduce power and cooling requirements and eliminate excess cabling. ATTO FastFrame simplifies network administration by using the ATTO Configuration Tool. Offering the lowest power consumption in its class, FastFrame further accelerates the cost savings by allowing data centers to stay within their power budgets.

Technical Features

- Simultaneously supports multiple networking and storage protocols: FCoE, TCP/IP, iSCSI
- 400,000 IOPs per port delivers high-throughput for critical applications
- Fibre Channel over Ethernet (FCoE) built on ATTO's field-proven Fibre Channel stack
- Interoperable with a broad range of LAN and SAN infrastructures including targets, switches and initiators
- Supports Data Center Bridging; Priority-Based Flow Control (PBFC), Enhanced Transmission Selection (ETS) and DCB Exchange (DCBX) protocol
- Up to 10Gb/s throughput per port
- Quad, Dual and Single port configurations
- High-performance x8 PCIe 2.0 bus
- Driver support for Windows® (2003, 2008, 7, Vista and XP), Mac OS® X, and Linux
- Industry's lowest power consumption maximizes benefits of convergence
- 3-year standard product warranty

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FastFrame™ CS14, CS12, CS11

Tech Sheet

Technical Specifications

Applications

FastFrame™ 10GbE FCoE Converged Network Adapters combine the unparalleled performance of 10 Gigabit Ethernet, the lossless benefits of Enhanced Ethernet, and the robustness of Fibre Channel over Ethernet (FCoE) built on field proven Fibre Channel technology to meet the performance and economic needs of today's growing data centers. FastFrame CNAs enable storage traffic to be directly carried over Ethernet alongside networking traffic, delivering a single connectivity solution for high bandwidth LAN and SAN applications.

Ethernet Features

- Intel Ethernet Controller #82599
- Data rate per port: 10Gb/s
- Jumbo frame support up to 9,000 bytes
- Tx/Rx IP, TCP & UDP checksum offloading (IPv4, IPv6) capabilities, Transmission control protocol (TCP), User datagram protocol (UDP), Internet protocol (IP)
- Tx/TCP segmentation offload, Large send offloads (LSO)
- Data Center Bridging (DCB) support
  - -Priority-Based Flow Control 802.1Qbb rev.0
  - -Enhanced Transmission Selection 802.1Qaz rev.0
  - -Data Center Bridging (DCBX) protocol
- Low latency interrupts
- Ability to create multiple VLAN segments

Network Standards

- IEE802.3ae: 10GBASE-SR, 10GBASE-LR
- SFF-8431: 10GSFP+Cu (a.k.a Direct Attach)
- 802.1 Qbb: Priority Flow Control
- 802.1 Qaz: Enhanced Transmission
- DCBX Protocol

FCoE Features

- Concurrent Logins 2048
- Active Exchanges/port 2048
- FC Class 3 support
- Protocol - FCP (SCSI-FCP)
- 400,000 IOPS per port
- FC-FDMI
- FC-GS-2/3/4
- FC-FS
- FCoE Initialization Protocol (FIP) Version 1

Bus Specifications

- x8 PCI Express 2.0
- Supports PCI Express Base 2.0 and CEM Spec 2.0

External Connectivity

- 10Gb Four, two or one LC fiber-optic connectors
- Supports 10Gb SFP + Cu for Direct Attach
- 2 LED indicators per port
- LED Indicators: LINK (solid), ACTIVITY (blinking), LINK SPEED (green = 10Gb, yellow = 1Gb)

User Benefits

- Low total cost of ownership (TCO) with the ability to route LAN and SAN traffic over a single fabric
- Multi-protocol support (FCoE, iSCSI, TCP/IP) for flexible and easily scalable connectivity
- Multiple offloads for lower processor usage and increased throughput
- Reduced power, cooling and cabling costs
- Simplified management console for network and storage infrastructure

Operating System Support

- Windows® Server 2003, 2008, 2008 R2
- Windows XP, Vista, 7
- Red Hat (RHEL) and SUSE (SLES) Linux
- Mac OS® X 10.6 and later

Environmental and Physical Specifications

- Operating environment: 0°C to 55°C (32°F to 131°F)
- Non operating environment: -40°C to 70°C (-40°F to 157°F)
- Airflow required: 100 lf/m
- Humidity: 5% to 95% non-condensing
- Power Consumption

  FFRM-CS14: 15.7W
  FFRM-CS12: 5.9W
  FFRM-CS11: 4.7W

Agency Approvals

- FCC Part 15 Subpart B
- EN55022: 2006 + A1: 2007, Class B
- EN55024: 1998 + A1: 2001 & A2: 2003

Compliance

- EN60950-1: 2001, IEC 60950-1: 2001
- EN60825-1: 2007, IEC 60825-1: 2007
- EN60825-2: 2004, IEC 60825-2: 2004
- RoHS

Management Tools

- ATTO Config Tool management and configuration utility

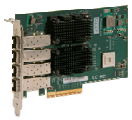
Warranty

- 3 Year

Ordering Information

Phone: 716-691-1999

Quad Port: FFRM-CS14-000
Dual Port: FFRM-CS12-000
Single Port: FFRM-CS11-000



ATTO FastFrame CS14	
Ports	Quad Port
Bus Characteristics	x8 PCIe 2.0
Connector	Optical LC SFP+
Form Factor	Full Height
Transfer Rate	8GB/s (Full duplex)
Part Number	FFRM-CS14-000

ATTO FastFrame CS12	
Ports	Dual Port
Bus Characteristics	x8 PCIe 2.0
Connector	Optical LC SFP+
Form Factor	Low Profile
Transfer Rate	5GB/s (Full duplex)
Part Number	FFRM-CS12-000

ATTO FastFrame CS11	
Ports	Single Port
Bus Characteristics	x8 PCIe 2.0
Connector	Optical LC SFP+
Form Factor	Low Profile
Transfer Rate	2.5GB/s (Full duplex)
Part Number	FFRM-CS11-000

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